

# Nidec Modernization Solution



# Nidec Group



Shigenobu Nagamori

- Founded: July 1973
- Head Office: Kyoto, Japan
- Employees: Approx. 120,000
- Operations in 45 countries through 240 companies
- Publicly Traded: Tokyo SE since 1988
- Market Cap: Approx. ¥ 4.2 T (**\$ 42B**)
- Business: *World of "Spinning & Moving"*
- **No. 1** Motor supplier of the world.

## Chairman, President & CEO

Aug. 1944

Born in Kyoto, Japan.

Mar. 1967

Graduates from Polytechnic University in Tokyo, Japan (Department of Electrical Engineering).

Jul. 1973

Founds Nidec Corporation at age 28.

**NIKKEI BUSINESS, Nov 2014**

[The Best President selected by Presidents]

**Harvard  
Business  
Review**

The Best-Performing CEOs in the World

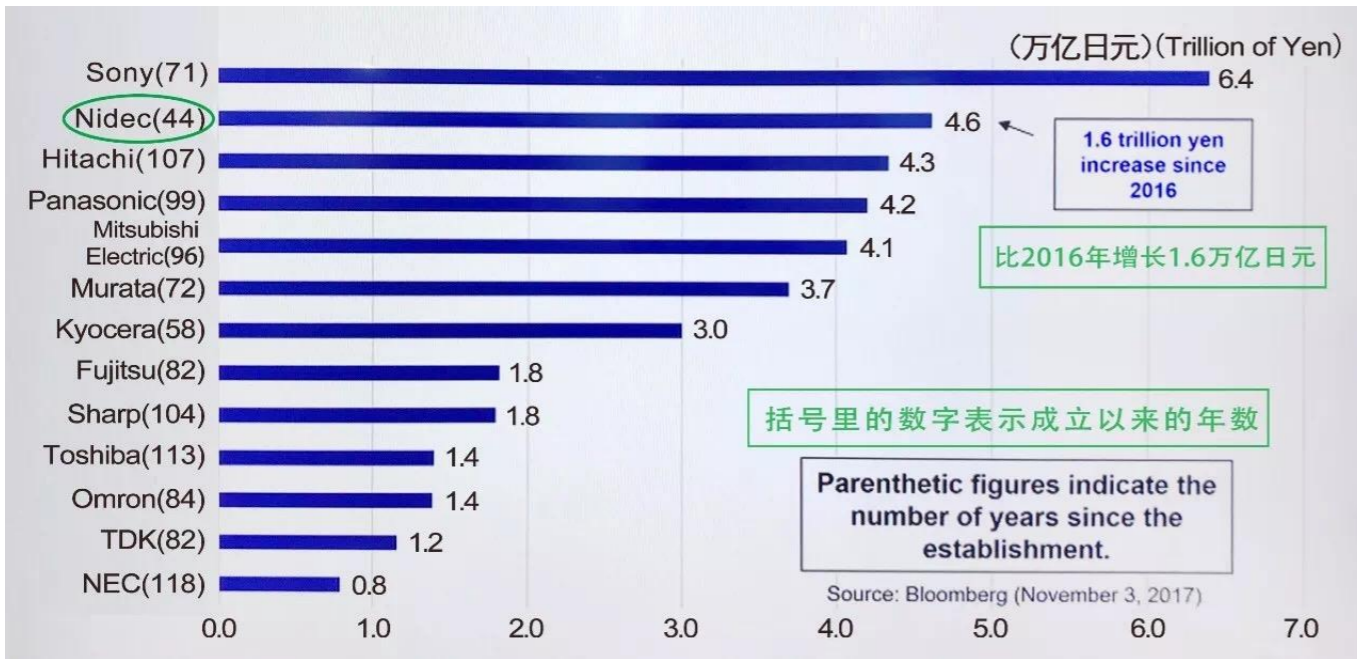


## 240 Entities in 45 Countries



# Market performance in Tokyo Stock

Source from: Bloomberg: Nov. 3rd, 2017



## Performance of Nidec Stock



- Ranking from No. 4 to No. 2 from 2016 to 2017;
- Capital value went to 42 billion US till Nov. 2017, increased by 35%

# Elevator Business

2



# One-stop modernization solution

## 7 R&D and manufacturing centers

**Nidec**

All for dreams



**Nidec Imperial Electric, US, 1908**  
*Elevator machine*



**Nidec KDS, China, 1960**  
*Elevator machine*



**Leroy Somer, French**  
*Elevator machine*



**Nidec CT, UK**  
*Elevator inverter*



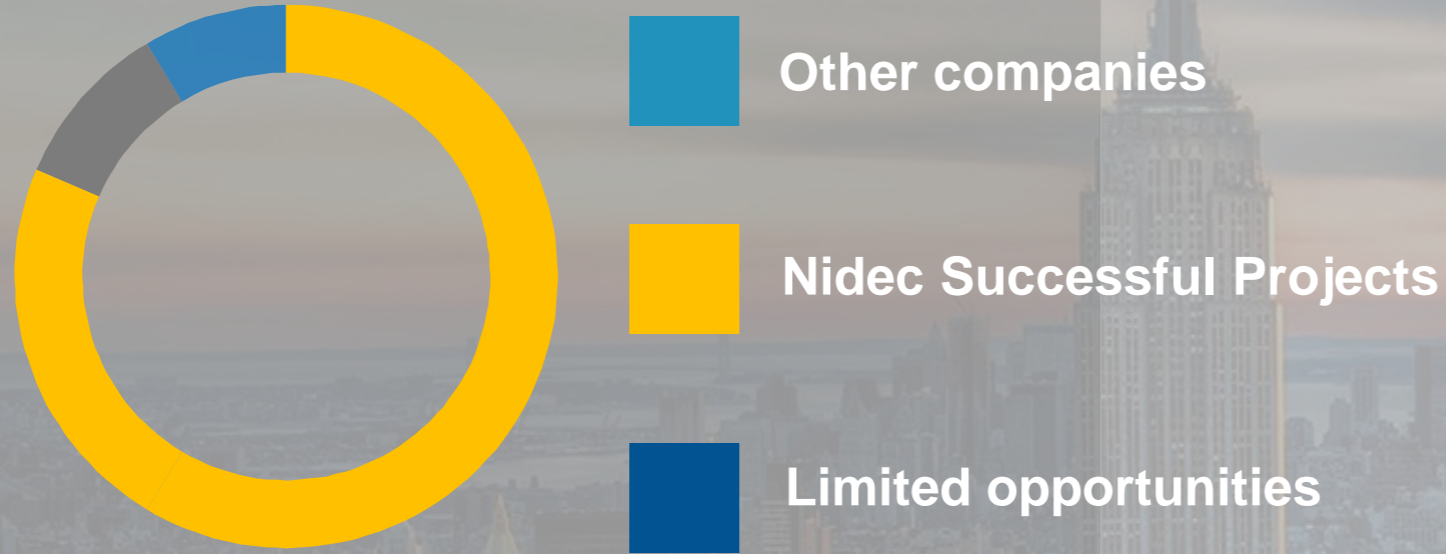
**Nidec MCE, US, 1983**  
*Elevator control system*



**Nidec KDM, Mexico**  
*Elevator control system*



**Nidec Kinetek Control, China**  
*Elevator control system*



## More than 300,000 Modification Projects In North America

Nidec owned more than 40 years experiences in modification field; Over

**85%** inquiry through MCE & Imperial company

and **60%** modification projects obtain successfully, which include Statue of liberty, Empire State Building and others centurial historic building;

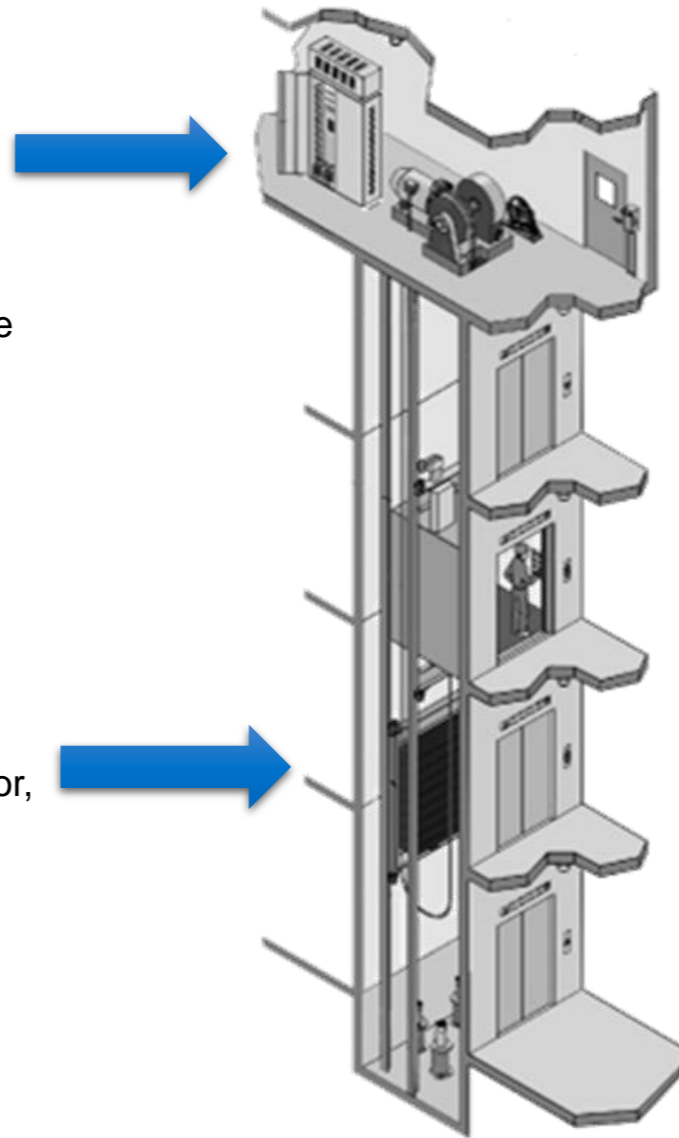


## 2. Control System

- Control, Group Control
- COP,LOP
- Travelling cable, Hoistway cable
- Other Hoistway components

## 4. Safety Components

- Safety Components (Over speed governor, Safety gear, Buffer)
- Deflector sheave, Car frame deflector, counter weight



## 1. Traction System

- Machine
- Bedplate
- Deflector Sheave
- Rope

## 3. Door System

- Car door operator
- Hall door panel
- Track and hanger

**Elevator Modernization : Customized and affordable solution with optimized performance!**

## Customizable Modernization Options

Nidec modernization solution is based on every existing elevator operation status, usage frequency and user feedback. The solution provides customers the most easy and doable direct replacement.

From partial to complete replacement

| Modernization Range   |   | Control System | Traction System | Door | Safety Components | Complete Replacement | Destination Based Dispatching System |
|---|---|----------------|-----------------|------|-------------------|----------------------|--------------------------------------|
| 25% Modernization<br>Improve safety performance   | A | ✓              |                 |      |                   |                      |                                      |
| 50% Modernization<br>Improve safety performance, efficiency   | B | ✓              | ✓               |      |                   |                      |                                      |
| 75% Modernization<br>Improve safety performance, efficiency and comfort, modern monitoring management | C | ✓              | ✓               | ✓    | ✓                 |                      |                                      |
| 100% Modernization<br>Complete Elevator Replacement   | D | ✓              | ✓               | ✓    | ✓                 | ✓                    |                                      |
| Improve skyscrapers traffic management  |   |                |                 |      |                   |                      | ✓                                    |

# One Stop Modernization Solution

Over 300,000 set modernization experience around the world

**Replace directly: Precise and affordable**

**“Green parts”  
replace directly  
(1:1 or 2:1)**



**Diversify  
Machine  
Solutions**



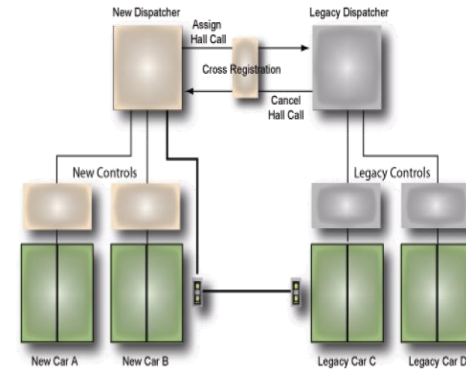
**Simplified and  
Compatible Controller  
Solution**



**Advanced DBD System  
with Precise logic  
perfect connect with  
Security System**



**High Efficient  
Group Control  
System**



Statue of liberty modification project was finished successfully in 2013

—American landmarks



111 Chicago North Canal Centre—  
awarded **《2015 North America best  
modification project》**

- ✘ Group control 10 elevators
- ✘ Destination Based Dispatching(DBD)
- ✘ Building Security System perfect connect with elevator

# Control System Modernization



## After Modernization

- UCMP feature with black box technology, real-time record of the data, safe and reliable
- Parameter adjustment via PC and cellular phone
- S-curve technology to improve ride comfort ( $< \pm 1\text{mm}$ )
- Intelligent pre-torque feature to avoid rollback
- Complied with EN81-1, EN954-1 Cat.3 & IEC/ EN61508 SIL2 standards.

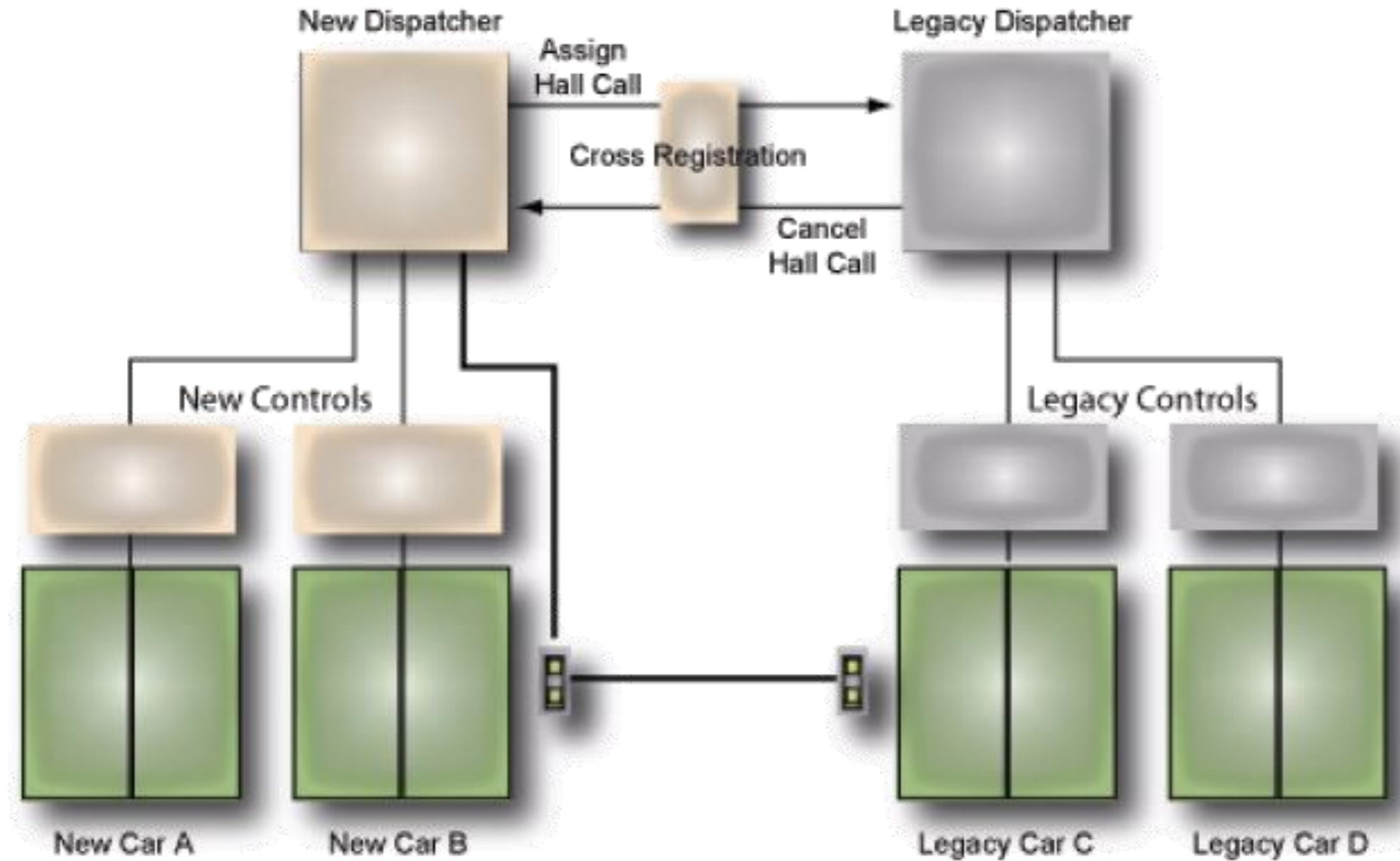


## Modernization with DBD System

- Provides excellent crowd control in the main elevator hall and eliminates traffic congestion
- Have been installed in various job sites and results has shown a reduction in time to destination during the peak hours of up to 83%.
- Seamless Security
- DBD overlay allows the new cars to connect with the existing cars, minimizes the time of replacing the whole car group and maximizes the installation efficiency.



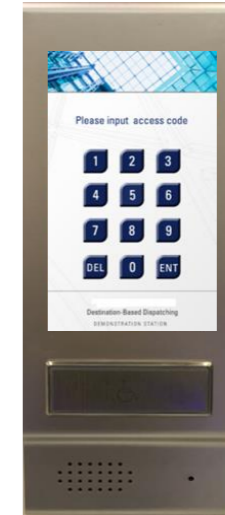
## Cross Registration



# Destination Based Dispatching System

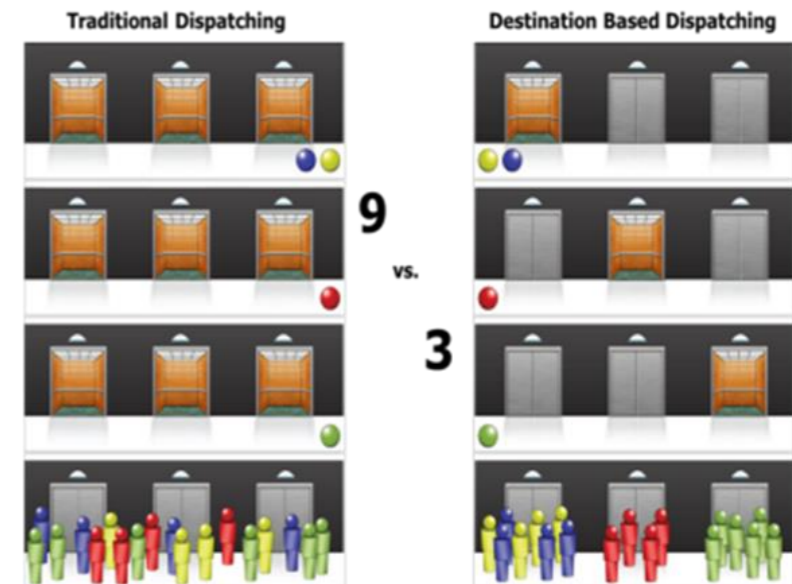
## Destination Based Dispatching (DBD)

- Speed up the efficiency of high speed elevator group control
- Manages the elevator group, interval, handling capacity and nominal travel time.
- Eliminates traffic congestion, advanced dispatching up to 8 elevator group
- Can be fully integrated with the building security system
- It can be configured as a lobby boost or full-source-to destination option
- Maximize efficiency especially on projects such as hotels and offices
- Compatible with Nidec control and monitoring system



Increase Traffic Efficiency up to **63%**

### What is Destination Based Dispatching?



# Traction System Modernization

## ✓ State-of-art design

- High level of standardized design and engineering capabilities
- Can adapt all hoistway dimensions
- Wide product range
- Rugged high-performance design, product life expectancy longer.

## 1:1 roping ACPM gearless solution

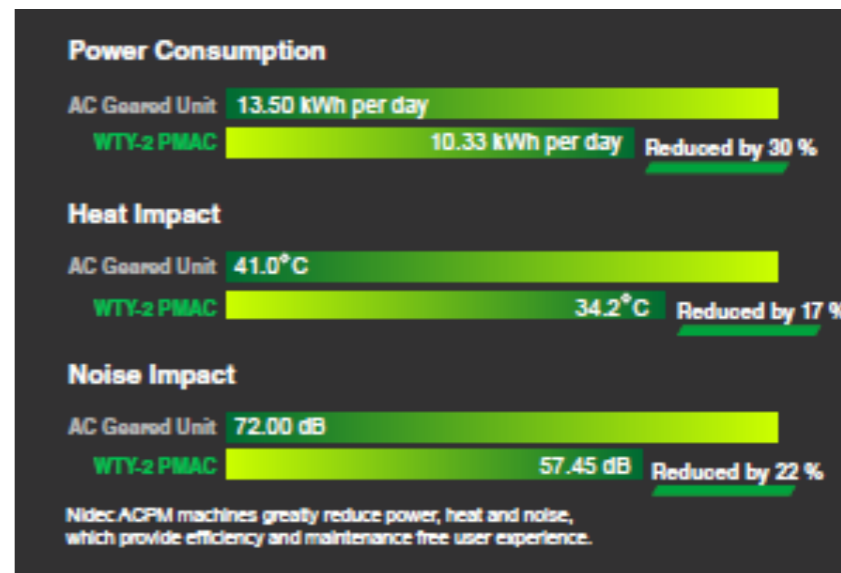
- Fit to all rope configuration: 8mm, 10mm, 11mm, 12mm, 13mm, 16mm, 19mm etc.;
  - Wide range of product to fit different shaft size and control system;
  - Flexible to match with various installation
  - Heavy Duty application
- ✓ **Double independent brakes allow elimination of external rope brakes** (Each brake will maintain 125% of the rated capacity)



Direct Replacement on job site!

Machine Saves  
Energy Up to

30%



# Door System Modernization

## Door operator modernization

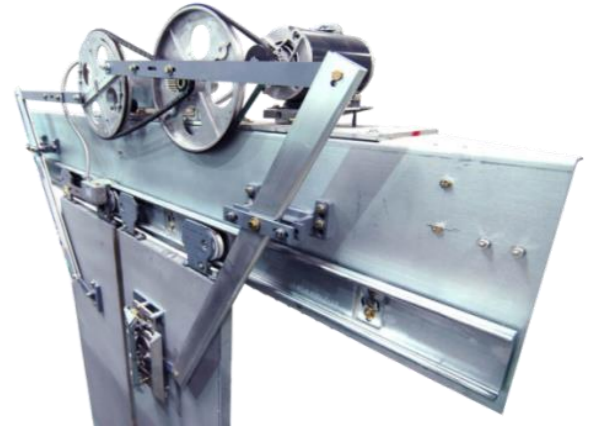
- Nidec provides a variety of door modernization options. This includes door operators, cab doors, and door replacement with customize features. Fire rated doors can also be provided according to code requirements.
- Door clutch can couple with existing door roller to work with existing landing door.

## Ranges of door operator modernization

- Motor and Control
- Door operator and landing door panels

## Performance and application advantages of new door operator

- Dead loop control
- PM motor, high performance, fast response, low noise
- Four default speed curve adjustment options may be possible for additional programming speed curves
- Editable interface, simple parameter settings
- Separate control unit to meet minimum top level requirements
- 100W motor high torque output, can drive more than 350kg load belt rated acceleration
- Meet the TUV EN81-58, B476-22 fire requirements of the hall door system
- Long life - up to 100,000 times



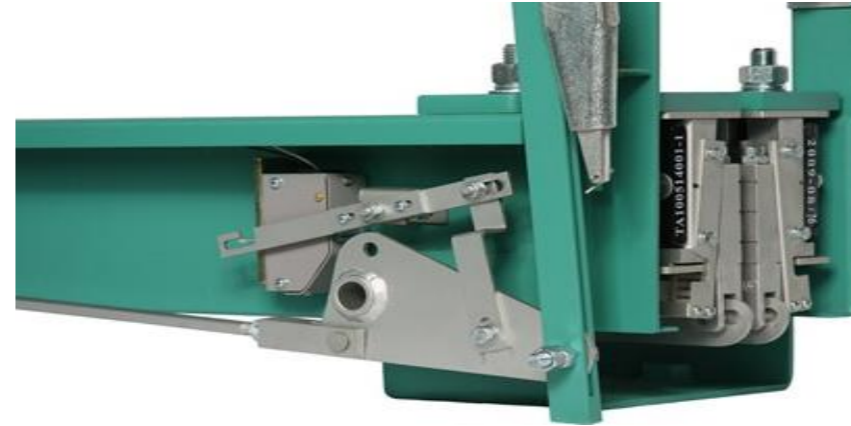
**After**

**Before**



# Safety Components Modernization

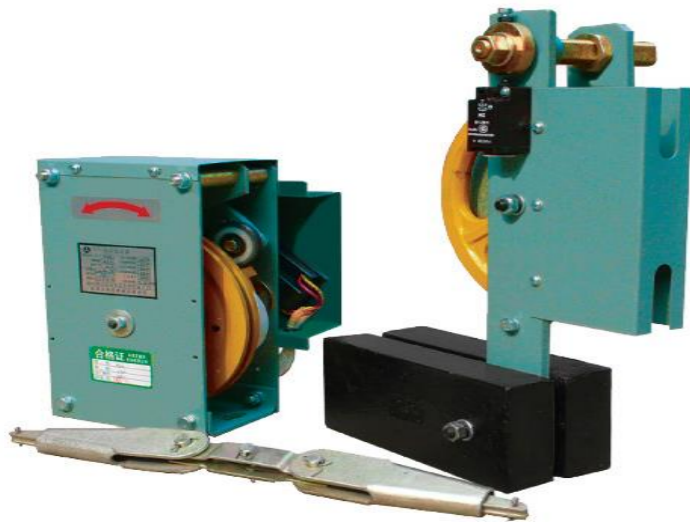
- Self-designed safety gear with certified standards and requirements.



**AQ Safety Gear**



**K Deflector Sheave**



**XS Governor**



**Guide Shoe**



**YH Buffer**



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# Notable projects

## Washington Monument , Washington DC

- 1 car, 50 floors
- 2.5m/s

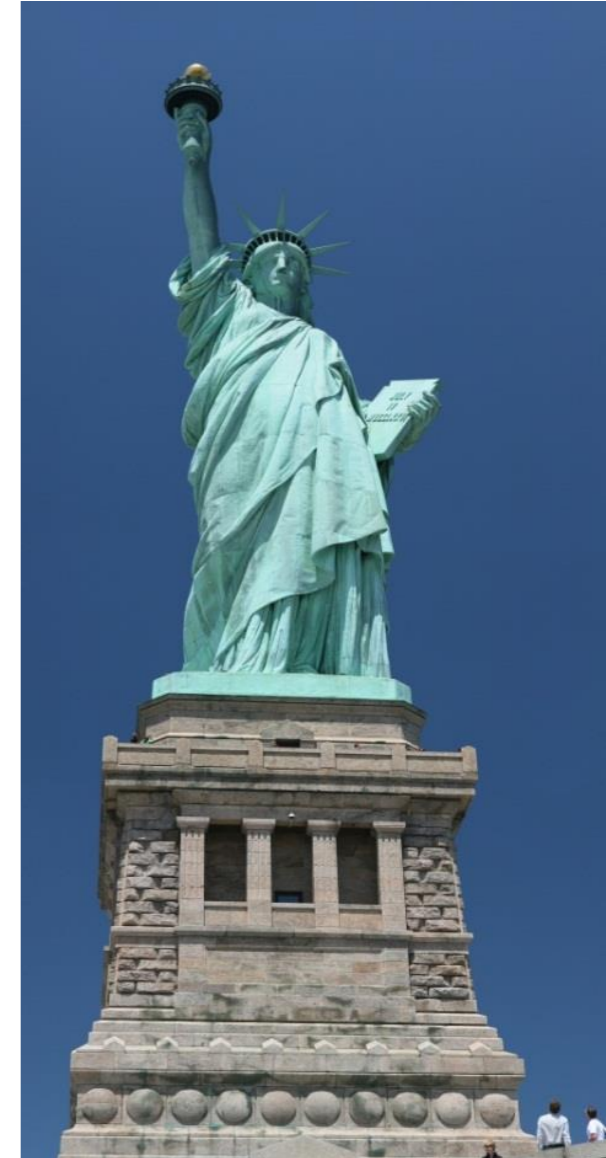


## Supreme Court, Washington DC

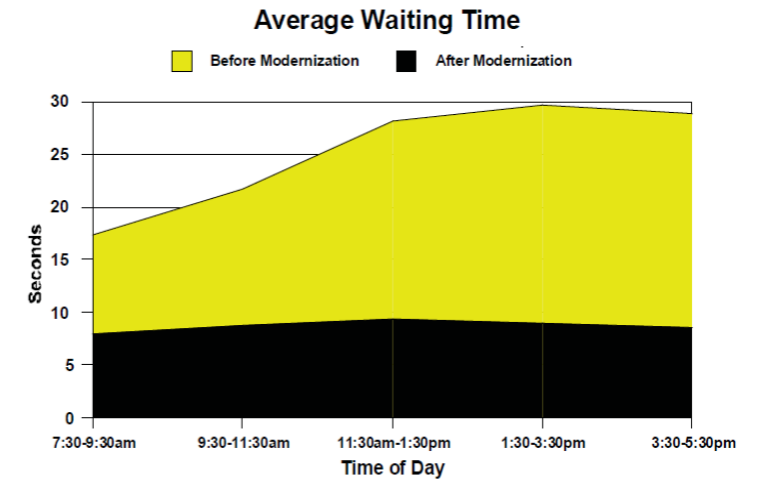
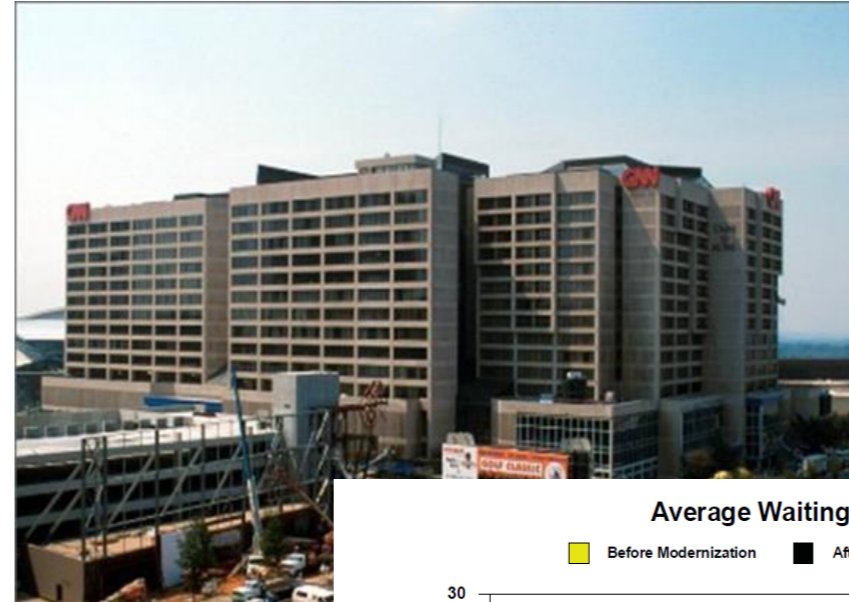
- 8 cars, 5 floors
- 2.5m/s



## Statue of Liberty, New York



# Modernization-North America



## 111 North Canal, Chicago

- 2250KG-3000KG
- 2.5-3.5 m/s
- Heavy duty freight elevator
- Seamless Security System
- Destination Based Dispatching up to 10 car groups

## CNN Headquarter, Georgia

- 1360KG
- 2.54 m/s
- 4 group control



Alfred Hospital, Australia

Capacity: 1768KG  
Speed: 2.5m/s

Singapore Tax Building

- Capacity: 1600KG
- Speed: 2.5m/s
- Car: 8

HK Shield Industrial Center

Capacity: 1000KG  
Speed: 3.5m/s  
Car: 4台



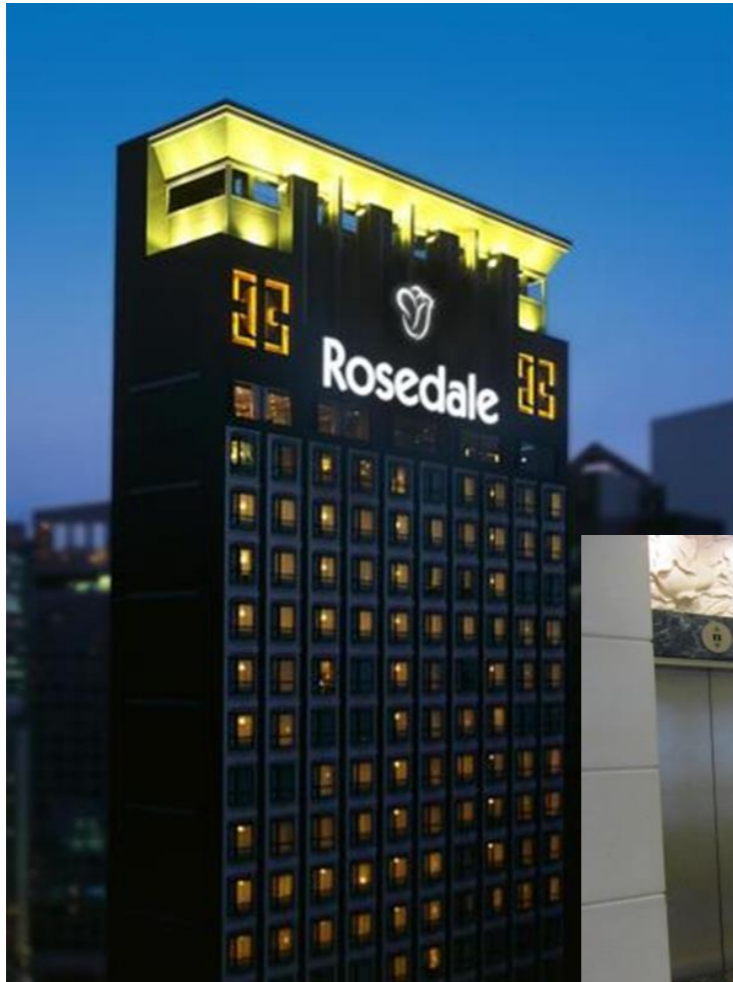
Marathon Futurex, India

Cars: 8  
Capacity: 1360KG;  
Speed: 3.0-4.0m/s, Destination Based Dispatching System



ING Building, Malaysia

Cars: 7  
Capacity: 1360KG; Speed: 4m/s



## Rosedale Hotel, Hong Kong

Cars: 4  
Capacity: 900KG, Speed: 3m/s

## Qingdao Green Island Garden, China

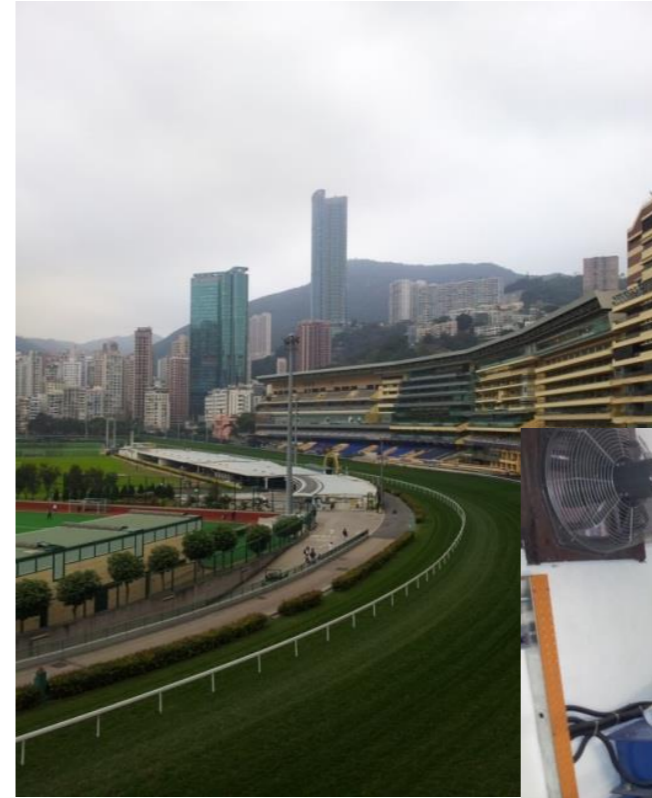
Cars: 4  
Capacity: 1000KG; Speed: 1.75m/s





Victory Hotel, Tianjin

Cars: 3  
Capacity: 1000KG, Speed: 1.5m/s



Hong Kong Jockey Club, Hong Kong

Cars: 40  
Capacity: 800-2500KG, Speed: 1.0-2.5m/s



**Nidec**®

**All for dreams**™